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ABSTRACT

This paper discusses some of the educational potential of psycholinguistic research. The first area discussed is the educational implications of the human capacity for acquiring language. Studies cited cover topics related to the universality of language acquisition, children's mastery of basic grammatical devices, neurophysiological states of readiness, psychological processing of the environment, psycholinguistics and reading, and structure words. The second area discussed is the implications of language usage. Research discussed in this area relates primarily to social and environmental variables which may provide a key to understanding individual and group differences in language behavior. Particular areas of research discussed include: dialect instruction, verbal interaction in families, code selection, and language styles. Several conclusions are presented: the preschool years are the most critical for language acquisition; all languages share the same potential for expression; the implicit knowledge of the linguistic system acquired as the child learns to speak the language can facilitate his acquisition of other language skills; and a restricted communication code may be impeded in some aspects of school learning. (WR)

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IMPLICATIONS OF PSYCHOLINGUISTIC RESEARCH FOR LANGUAGE LEARNING IN THE ELEMENTARY SCHOOL

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Psycholinguistic Research and Language Learning

Dorothy C. Higginbotham

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Recognizing the presumptuousness of attempting to treat so complex a subject in so short a time, I shall limit this presentation to selected aspects of the following premises: (1) language acquisition theory has relevance for educational practice, and (2) the extent of the child's knowledge of the uses of language in a variety to communicative contexts has some bearing on school performance.

Implications of Language Acquisition

Simple observation may make it obvious to first grade teachers that children come to their first day of school equipped with a relatively sophisticated mastery of their native language. However, there is nothing simple or obvious about the processes by which the child has acquired his language, nor is the process without relevance for elementary education. The ability to communicate with language is a peculiarly human behavior which seems to be the result of some innate mental capacity operating in concert with biological and environmental factors. The universality of the language acquisition process is supported by data which reveal remarkable similarities in the pattern of development among children from vastly different cultures, environments, and language communities (Slobin 1968, 1969). By the end of their third or fourth year most children have mastered the basic grammatical devices and structural patterns involved in the utterance of their language, and by their fifth or sixth year have sufficiently stabilized the rule system so that they are able to control many of the inconsistencies and complexities of their language. By the time they enter first grade, normal children are producing a near match for the adult grammatical model of their particular language community (McNeill 1970; Menyuk 1961; O'Donnell, Griffin, Norris 1967).

There is so much uniformity in pattern and rates of language acquisition that innate biological capacity and species-specific language capabilities seem to be fundamental to the process. Biolinguist Eric Lenneberg (1967) believes that acquiring language is to some extent dependent upon the maturation of neurophysiological states of readiness which are triggered by external stimulation. Lenneberg's research is of particular relevance for education because of findings which suggest that there is a "critical period" for creative language

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learning. Lenneberg believes that a level of maturation, particularly in the structure and functioning of the brain, is necessary before the child can make use of his environment for acquiring language. Further, he claims that the developmental stage which makes language acquisition possible is quickly outgrown in the early teens. He explains the position this way:

> After puberty, the ability for self-organization and adjustment to the physiological demands of verbal behavior quickly declines. The brain behaves as if it had become set in its ways and primary, basic language skills not acquired by that time . . . usually remain deficient for life.

The preschool and elementary years, then, seem to be the really critical time for acquiring language skills because of the innate flexibility of brain functions and the individual sensitivity to stimuli during this period.

Lenneberg speaks of "automatic acquisition" as opposed to some more "conscious and labored" approach to language learning. The apparent ease or "automaticness" with which children move through the hierarchical stages in acquiring their language is of great interest to psycholinguists. In learning their native language, children of any given linguistic community will construct the same basic rules underlying the system in spite of the fact that the language models to whom they are exposed may vary considerably in kind and quantity of output.

Some psycholinguists are attempting to account for the uniformity and regularity in native language learning by relating the language acquisition process to general cognitive development and to a psychological capacity to process and store information. In a recent working paper Dan Slobin (1970) has built a convincing case for logical processing variables which are specific to language acquisition. He posits that psychological processing of the environment may account for the child's very early discovery of certain knowledge that is basic to all language development. This includes, for example, the discovery that:

(1) intonation and intensity of vocalization are of expressive significance; (2) the flow of speech can be segmented; (3) words make reference; (4) words can be used in combination; (5) the meaning of an utterance is more than a combination of the meanings of its elements; (6) the order of elements in an utterance is significant; and, (7) the internal structure of linguistic units should be preserved. This is very basic knowledge which all children must bring to bear in learning to speak and understand the language of their environment, and it is knowledge which might be profitably applied in the teaching of primary and secondary language skills in the elementary grades.

It is this kind of basic linguistic information which innovators like Ruth Strickland (1962), Robert Ruddell (1965, 1970), and Kenneth Goodman (1965, 1970) are making use of in developing what is being called a psycholinguistic approach to reading. This approach takes advantage of the intuitive knowledge about language that young children have gained while learning to speak the language (Entwisle 1971). By school age the basic grammatical patterns the child has acquired as a result of applying this knowledge are so well learned that he produces them with little conscious effort. The importance of familiarity of syntactic patterning to reading has been stressed by Robert Ruddell whose research has shown that children comprehend reading material better when the structural patterns are familiar. He concludes that familiarity with structure enhances expectations and enables the child to narrow alternate word meanings. In this same vein Goodman (1965) has found that children are able to decode words better in a running context than in isolation. His research has led him to call reading a psycholinguistic guessing game which draws on the child's knowledge of language structure. He depicts the child as an active not a passive processor of linguistic input when he says, "The ability to anticipate that which has not been seen . . . is vital in reading, just as the ability to anticipate what has not been heard is vital in listening." Reading material which makes use of the

child's well-practiced knowledge of syntactic structures takes advantage of his natural linguistic expectations to foster success in the process of learning to read.

An aspect of elementary school language instruction which is being called into serious question by our increasing understanding of the language acquisition process is the much-maligned but still prevalent practice of teaching prescriptive grammar. If the child can already apply most of the rules which govern his language upon school entry, it seems pointless and wasteful to spend time making him conscious of those rules. A better understanding of the nature of language development in children is revealing specific needs and suggesting more appropriate approaches. Certainly some development and refinement of linguistic structures continues throughout the elementary grades (Menyuk 1969, C. Chomsky 1969). Some of this development involves the adding of new transformations, but there is also a great need at this level to extend word meanings, particularly in that small group of words which are especially powerful due to their frequency and their function in sentences. A fact often not noticed by adults is that some common function words are used by children before they have more than the vaguest notion of their meaning. Words such as "because," "unless," "whether," "so," "if," and "although" signal semantically complex relationships which must be understood by the child before he can be fully successful in using language for abstract, propositional thought (Slobin 1969; Menyuk 1969; Bereiter 1965). There is considerable evidence that many elementary school children have not understood the relationships which such structure words represent. Prescriptive grammar is totally inappropriate as an approach to this critical aspect of language development. Many psycholinguists now believe that new syntactic structures are added as a function of acquiring new "meanings" (Slobin 1970). A promising approach then would seem to be in the direction of expanding communicative contexts and

experiences for the purpose of adding new meaning accompanied by the appropriate linguistic forms for expressing and storing the new concept. For example, important relationships might best be learned and stored for future use through manipulation of concrete materials and verbalizing related questions, alternatives, comparisons, and so on (Blank 1970). This is far more productive than the prescriptive approach which concentrates on structural rules with little attention to meaning.

Implications of Language Use

Now let us turn to our second premise. An area of psycholinguistic research which has great implications for education is that which has to do with discovering and defining those variables which intercede between what individuals know of their language (competence) and what they actually do in using the language (performance). Emphasis in this discussion will be on social and environmental variables which may provide the key to understanding individual and group differences in language behavior.

In the remarks thus far there has been emphasis on the universality of the language acquisition process and on the basic linguistic knowledge which all children acquire. At this point one might ask, if all humans share so much implicit linguistic knowledge, then how does one account for the apparent differences that exist among individuals in command of the language? The answer appears to lie in the speaker's use of his language. Psycholinguists and sociolinguists are beginning to believe that linguistic performance is the product both of the individuals implicit knowledge of the grammar of his language and his knowledge of the uses of language that are appropriate in his family and community (Cazden 1970; Hymes, in press; Williams and Naremore 1969; Williams 1970).

It seems safe to say that no two people produce language exactly alike. Individuals, families, and larger societal groups differ in the functions which

language serves for them and the value they place on language as a means of communicating. These differences have an effect on the language produced, for at the same time the child is learning the basic structures of his language, his interaction with adults and peers must also be teaching him something of the modes or styles of language required in his particular environment. Thomas Bever (1970) has summed up the effect of environmental interaction on language learning in this way: "The way we use language as we learn it can determine the manifest structure of language once we know it."

Language differences most remarked by teachers have typically been deviations from standard English. This preoccupation seemed justified to some when in the 1960's there developed a widely accepted argument which branded nonstandard dialects and particularly nonstandard Negro English as a deficient tool for learning. This view persists today in spite of the linguists' insistence that all languages have the same intrinsic communicative potential and that no one dialect or language is superior to another in what it can express. There is nothing in any dialect which prevents its speaker from internalizing and using the most complex meaning and the most elaborated structures. On the other hand, there are those who argue that attempts to change the native dialect in the early school years may be both unnecessary and injurious. Walter Loban (1965) maintains that general language development is the most critical issue in the early years and that if dialect teaching is to be undertaken it should be delayed until the later elementary years. Joan Baratz (1970) is well-known for her view that beginning reading materials should be altered to more nearly reflect the speech patterns of the child rather than changing the child's speech to fit the formal style of the reading text. Delaying or omitting deliberate dialect instruction means that the teacher must be able to understand and accept the child's dialect if he is to be at home in the communicative setting of the classroom.

While all language systems are equal in potential for expression, there are differences in the manner of use individuals make of their language. This is a critical distinction between language as system and language in practice: people differ in what they extract from the potential of their language by the use they make of language as a tool of thought and communication. Whatever their language or dialect, all people have a range of linguistic styles or modes* of expression available to them and these options seem to be exercised in relation to the requirements of the particular communication environment. The implication here is that the child's customary modes of speech in and out of the classroom may be incompatible with the communication skill requirements of the learning situation.

Much of the thinking on varying codes or styles of speech is credited to Basil Bernstein (1970) who believes that the family as a socializing force is the most important influence on early language development. Families differ in social structure and as a consequence in ways of relating to children, in the kind and quantity of verbal interaction, and in the language they elicit from their children.

After studying the speech of low and middle income British youngsters Bernstein reported that what he termed a restricted code was the dominant language style among his lower income subjects. He characterized this code as limited in vocabulary, dominated by consideration of here-and-now, concrete rather than abstract, drawing from a narrow range of syntactic alternatives, and lacking in language as used for explanation, reflection, planning, and problem solving. He contrasts the speech of the lower status group with the higher socioeconomic group who are more likely to use an elaborated code which is more specific in

*In this discussion, style, mode, and code are used interchangably in reference to performance in speech.

reference, employs a greater range of syrtactic alternatives, and uses more modification and greater vocabulary selection. Recent reviews of Bernstein's work stress that lower class children do use the elaborated code in some circumstances, but it does not appear to be a frequently selected mode of expression for these children (Cazden 1968; Labor 1970a, 1970b; Houston 1970).

Bernstein's work has called attention to the fact that speakers of a language may have a variety of styles which select different linguistic alternatives for organizing and conveying meaning. The frequency with which one uses a particular code or the range of speaking styles an individual may employ is not strictly a function of socioeconomic class; rather it is a reflection of individual preference, group language style, situation, topic, or some combination of personal, social, or contextual variables (Cazden 1970; Bernstein 1970). Code selection has relevance for child language development, for as Paula Menyuk (1971) has recently pointed out, the frequency with which a child uses certain relational words, negation, imperatives, embedded constructions or any number of other structures is a function of individual style once the structure has been acquired.

What makes the notion of varying codes especially important to educators is the possibility that there is a correlation between accustomed modes of expression and educability. Elementary schools to a great extent deal in abstract principles and operations for at this stage of cognitive development the child is moving from concrete operations into symbolic processes. In addition, the language used to formulate new relationships and operations in the elementary grades tends to be abstract in reference because the school setting is usually removed from the action context or situation which would provide immediate reference (Bruner et al 1966; Greenfield and Bruner 1971). This abstract use of language is no problem for children whose communicative experiences have already made them sensitive to symbolic reference. Other children, however, may be much more

context-bound and accustomed to a communicative code that is primarily concrete in reference. The relationships between language and learning are not well understood but the present state of our knowledge suggests that the child may be adversely affected by the school learning experience if as a result of restricted communication experience he does not regularly use language to organize events, has few structural options for storing or communicating his thought, cannot recognize and express a variety of alternatives in verbal problem solving, and has difficulty finding word options to express thought (John 1963, Blank 1970). In short it would seem that the elaborated code as defined by Bernstein provides greater access to school learning while the dominance of a more restricted communicative style may interfere with learning.

The research reported here has been limited, but several conclusions pertinent to elementary education have emerged:

1. The period from ages 2 to 12 are the productive years for language learning. The preschool years are the most critical for language acquisition but development continues throughout the elementary grades.
2. The implicit knowledge of the linquistic system acquired as the child learns to speak the language can facilitate his acquisition of other language skills.
3. All languages share the same potential for expression, but people differ in the uses they make of language and therefore vary in the potential they extract from language.
4. Children habituated in a restricted communication code may be impeded in some aspects of school learning.

These conclusions suggest that an important beginning has been made in developing a theory of language instruction based on our growing knowledge of

language as it develops and functions for the child. This new perspective calls into serious question prescriptive approaches which have no significant effect on language behavior, and enrichment programs whose vague and general goals have little relevance for the development of individual children. What is wanted is an approach which builds on the considerable linguistic knowledge the child already possesses. But before such an approach can be fully implemented in elementary school language programs there is still much to be done. Much more information is needed concerning the relationships between language and learning combined with more knowledge of how language develops and is used. As research adds to our understanding of child language there must be increased attention to application and methodologies for the classroom. The greatest challenge in the new theory of language instruction may be that posed for teacher education. Psycholinguistic theory can have an appreciable impact on the classroom only if teachers have the knowledge and training which will enable them to: describe and assess the child's language capabilities; make humane and rational judgements about his most salient needs; and provide communication experiences which will develop new patterns and functions while still maintaining those already established in the home environment.

The task of implementing our new knowledge of language is enormous, but we must push on to extend and expand the small beginning that has been made. If the early years are as critical for language learning as is now believed, we must move quickly to replace unproductive practices. The challenge is great, but delay will only lead to continued waste of linguistic potential.

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